

WITHOUT **SENTINEL**® IT'S A QUESTION OF WHEN, NOT IF

The Sentinel answer to all your water treatment needs for hydronic heating systems

CLEAN - PROTECT - MAINTAIN



X100 Inhibitor
Enhanced scale and corrosion protection.
Available in:
275ml Concentrate tubes, Rapid-Dose Cans,
Quart bottles, 1 and 5 gallon containers



X200 Noise Reducer
A unique, life-long system treatment for the elimination of boiler noise.
Available in:
275ml Concentrate tubes, Rapid-Dose Cans,
Quart bottles, 1 and 5 gallon containers



X300 New System Cleaner
Sentinel X300 System Cleaner is specifically designed for new hydronic heating systems.
Available in:
275ml Concentrate tubes, 1 and 5 gallon containers



X400 System Restorer
Designed for existing systems, Sentinel X400 is a non-acid treatment for cleaning older heating systems.
Available in:
275ml Concentrate tubes, Rapid-Dose Cans,
Quart bottles, 1 and 5 gallon containers



X500 Inhibited Antifreeze
Provides protection against scale and corrosion in all types of indirect heating systems at low temperatures.
Available in:
1 and 5 gallon containers

DOSING RATE

X100, X200, X300 & X400
One Sentinel concentrate tube or quart is sufficient to treat up to 25 gallons of system water. Larger containers are available.

X500
The dosage of Sentinel X500 will depend on the level of frost protection required. A dosage of 20% volume (i.e. 5 gallons of Sentinel X500 added to a system having a typical volume of 25 gallons) or more is needed to achieve the minimum concentration of corrosion and scale inhibitor.

Sentinel Liquids
Add/inject to convenient point in heating system e.g. Boiler.

Sentinel Concentrates
Effective & convenient application for all heating systems.

FAQ

Q: Is Sentinel designed for steam systems?
A: No, Sentinel X-range products are specifically engineered for hot water boilers only.

Q: What kind of savings and system improvements can I expect?
A: Cleaning a dirty system can improve effectiveness by up to 15%.

Q: Will Sentinel products damage my system pipe work?
A: No, provided the instructions on the packaging are followed correctly.

Q: Are Sentinel products safe for the environment?
A: Sentinel products are completely non-toxic and bio-degradable.

POWERFLUSH

Powerflush for optimum efficiency
Powerflushing will dislodge and mobilise deposits and corrosion debris which usually resist tradition cleaning methods, providing a more effective and faster system clean.



YOUR PROBLEM, OUR SOLUTION

PROBLEM	SOLUTION
New system installation	1. Add X300 New System Cleaner at a 1% system volume concentration. 2. Allow circulation for a maximum of one hour. 3. Flush and refill the system. 4. Treat the system with X100 Inhibitor equal to 1% system volume. 5. Test level of inhibitor is correct with Sentinel Quick test Kit
Installing a new boiler on an old system to clean the system	1. Add X400 System Restorer at a 1% system volume concentration. 2. Allow circulation for a maximum of one hour. 3. Flush and refill the system. 4. Treat the system with X100 Inhibitor equal to 1% system volume. 5. Test level of inhibitor is correct with Sentinel Quick test Kit
Protecting a system against frost, scale and corrosion	In place of the Sentinel X100 – use Sentinel X500 Inhibited Antifreeze . Dosage of X500 will depend on the level of frost protection required; see Sentinel X500 Dosing Rate Table below.

SENTINEL X500 DOSING RATE TABLE							
% volume Sentinel X500	20	25	30	35	40	45	50
Freezing Point (°F) ASTM D1177	21	17	12	5	-2	-11	-20

Sentinel is the leading and award winning manufacturer of products designed to clean and protect residential hydronic heating systems. Sentinel's range of products restores and maintains system efficiency, reduces energy consumption and carbon dioxide production, and prolongs the life of hydronic heating systems.

www.sentinelprotects.com



For details of your nearest distributor or product information call **1 (877) 567 2560**

CALCULATOR

For Heating System Volume (Finned Tube Baseboard System) and Sentinel Product Dosage
Based on diameter of pipework used (left column) the calculator shows the dosage required per 100 feet length of pipework. For example X100 dosage, for 1" tubing and 1,000 feet length of pipework you would need 1.6 US quart bottles (10 x 0.16 US quart bottle).

HEATING SYSTEM			DOSAGE	DOSAGE	DOSAGE	DOSAGE	DOSAGE
Pipe work tubing size	Length of pipe work in feet	Volume of a system in US gallons [1]	Sentinel bottle dosage in QT for X100, X200, X300, X400 - Quart bottles	Sentinel concentrate dosage for X100, X200, X400 275ml/9.3fl oz cartridges	Sentinel 1 gallon drum dosage for X500 to prevent freezing to 20°F	Sentinel 1 gallon drum dosage for X500 to prevent freezing to 9°F	Sentinel 1 gallon drum dosage for X500 to prevent freezing to 3°F
3/8"	100	0.57	0.02	0.02	0.11	0.17	0.20
1/2"	100	1.02	0.04	0.04	0.20	0.31	0.36
5/8"	100	1.59	0.06	0.06	0.32	0.48	0.56
3/4"	100	2.29	0.09	0.09	0.46	0.69	0.80
1"	100	4.08	0.16	0.16	0.82	1.22	1.43
1 1/4"	100	6.37	0.25	0.25	1.27	1.91	2.23
1 1/2"	100	9.18	0.37	0.37	1.84	2.75	3.21
1 3/4"	100	12.49	0.50	0.50	2.50	3.75	4.37
2"	100	16.32	0.65	0.65	3.26	4.90	5.71
2 1/4"	100	20.65	0.83	0.83	4.13	6.20	7.23
2 1/2"	100	25.50	1.02	1.02	5.10	7.65	8.92

- [1] Estimate based on external diameter of pipe work - so the actual system volume would be less than indicated here.
- [2] For example, if the expansion tank holds 4 US gallons and you are using Sentinel X500 and want to prevent freezing to 20°F then use an additional 4/5 of a gallon.
- [3] For example, if the additional tank holds 20 US gallons and you are using Sentinel X500 and want to prevent freezing to 20°F then use 4 x 1 gallon drums.

EXPANSION TANK	DOSAGE	DOSAGE	DOSAGE	DOSAGE	DOSAGE
Volume in US gallons [2]	Sentinel bottle dosage in QT for X100, X200, X300, X400 - Quart bottles	Sentinel concentrate dosage for X100, X200, X400 - 275ml/9.3fl oz cartridges	Sentinel 1 gallon drum dosage for X500 to prevent freezing to 20°F	Sentinel 1 gallon drum dosage for X500 to prevent freezing to 9°F	Sentinel 1 gallon drum dosage for X500 to prevent freezing to 3°F
1.00	0.04	0.04	0.20	0.30	0.35
2.00	0.08	0.08	0.40	0.60	0.70
3.00	0.12	0.12	0.60	0.90	1.05
4.00	0.16	0.16	0.80	1.20	1.40
5.00	0.20	0.20	1.00	1.50	1.75
6.00	0.24	0.24	1.20	1.80	2.10

THERMAL STORE	DOSAGE	DOSAGE	DOSAGE	DOSAGE	DOSAGE
Tank volume in US gallons; Volume examples [3]	Sentinel bottle dosage in QT for X100, X200, X300, X400 - Quart bottles	Sentinel concentrate dosage for X100, X200, X400 - 275ml/9.3fl oz cartridges	Sentinel 1 gallon drum dosage for X500 to prevent freezing to 20°F	Sentinel 1 gallon drum dosage for X500 to prevent freezing to 9°F	Sentinel 1 gallon drum dosage for X500 to prevent freezing to 3°F
5.00	0.20	0.20	1.00	1.50	1.75
10.00	0.40	0.40	2.00	3.00	3.50
15.00	0.60	0.60	3.00	4.50	5.25
20.00	0.80	0.80	4.00	6.00	7.00
25.00	1.00	1.00	5.00	7.50	8.75
30.00	1.20	1.20	6.00	9.00	10.50
35.00	1.40	1.40	7.00	10.50	12.25
40.00	1.60	1.60	8.00	12.00	14.00
45.00	1.80	1.80	9.00	13.50	15.75
50.00	2.00	2.00	10.00	15.00	17.50
55.00	2.20	2.20	11.00	16.50	19.25
60.00	2.40	2.40	12.00	18.00	21.00

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